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|-------------------------------|------------------------|---------------------|--|
| <b>Notice of Allowability</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                               | 09/735,217             | ANDERSON, TIM       |  |
|                               | Examiner               | Art Unit            |  |
|                               | Lisa A Kilday          | 2829                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- This communication is responsive to amendment on 8/25/03.
- The allowed claim(s) is/are 2-5,7-10 and 12-18.
- The drawings filed on 12 December 2000 are accepted by the Examiner.
- Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - All
  - Some\*
  - None
 of the:
  - Certified copies of the priority documents have been received.
  - Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.
- Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
  - The translation of the foreign language provisional application has been received.
- Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
- CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - hereto or 2)  to Paper No. \_\_\_\_\_.
  - including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

**Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).**

- DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

|  |   |
|--|---|
| <input type="checkbox"/> Notice of References Cited (PTO-892)  | <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____.            |
| <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No. <u>8/25/03</u> | <input checked="" type="checkbox"/> Examiner's Amendment/Comment                  |
| <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                    | <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | <input type="checkbox"/> Other  |

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Parker on 12/11/03.

The application has been amended as follows:

Cancel claim 1.

Amend claim 2: A device, comprising:

a means for performing metal organic vapor phase epitaxy (MOVPE) on a surface of a substrate; and

a means for performing hydride vapor phase epitaxy (HVPE) on the surface of the substrate,

wherein said device can transition from MOVPE to HVPE *in situ*.

Amend claim 7: The device according to claim 5, wherein the substrate can be maintained at elevated temperatures during transition from HVPE to MOVPE.

Amend claim 9: The device according to claim 7, wherein said device can be used to grow GaN onto the surface of the substrate.

Amend claim 10: The device according to claim 8, wherein said means for performing HVPE comprises a hot-wall reactor having a source zone, and a downstream mixing zone,

wherein TMG can be reacted with HCl in the source zone to form a chlorinated gallium species, and wherein the chlorinated gallium species can combine with NH<sub>3</sub> in the downstream mixing zone and directed toward the substrate for deposition of GaN onto the substrate via HVPE.

Amend claim 12: A device, comprising:

a means for performing metal organic vapor phase epitaxy (MOVPE) on a surface of a substrate; and

a means for performing hydride vapor phase epitaxy (HVPE) on the surface of the substrate,

wherein the means for performing metal organic vapor phase epitaxy (MOVPE) on a surface of a substrate comprises a reactor,

wherein the means for performing hydride vapor phase epitaxy (HVPE) on the surface of the substrate comprises the reactor,

wherein the reactor can go back and forth between MOVPE and HVPE *in situ*.

Amend claim 13: The device according to claim 10, wherein the reactor is a hot-wall reactor.

Amend claim 18: The device according to claim 14, wherein the substrate does not have to be moved between MOVPE and HVPE.

The following is an examiner's statement of reasons for allowance: Vaudo et al. (6,533,874) does not teach or suggest a device, which can perform both MOVPE on a surface of a substrate and then a HVPE process on the surface of the substrate. Prior art teaches devices with layers formed by MOVPE and HVPE. Prior art does not teach

a device with a means for performing MOVPE on a surface of a substrate and means for performing HVPE on the surface of the substrate. The means for element in the device is interpreted to be the same chamber. *i.e. "in situ" is not a "cluster tool."*

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0957. See MPEP 203.08.

Any inquiry concerning this communication from the examiner should be directed to Lisa Kilday whose telephone number is (703) 306-5728. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo, can be reached on (703) 308-1233. My new telephone number after 1/13/04 will be: (571) 272-1962. My supervisor, Kamand Cuneo, can be reached at (571) 272-1957 after 1/13/04. The fax number for the group is (703) 305-3432. MPEP 502.01 contains instructions regarding procedures used in submitting responses by facsimile transmission.

Lisa Kilday

LAK

12/12/03

**EVAN PERT  
PRIMARY EXAMINER**

